

TARAN, Yu. N.

JPRS 55822

27 April 1972

UDC 620.18:669.784'27

MORPHOLOGY OF EUTECTIC IN Fe-W-C-ALLOYS

[Article by Yu. N. Taras, L. L. Ivanov, L. D. Morshkevich, UkrNIIspetsstal', Ukrainian Scientific Research Institute of Special Steel, Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, Russian, No 1, 1972, pp. 2-5]

Fast-cutting steels of the type R18 belong to the ledeburite class, since eutectic conversion influences the formation of their structure and many properties of cast and deformed steel [1]. The properties of cast tool steel depend on the amount, distribution and structure of the eutectic components. The corresponding structural characteristics of the eutectic mine the carbide heterogeneity of rolled steel.

However, in the literature pertaining to fast-cutting steels the mechanism of crystallization and morphologic features of the eutectic are not discussed. In [2] eutectic conversion in fast-cutting steel is described as the formation of ledeburite by the following reaction: liquid (L) + austenite (A) + carbide (C). According to phase composition and morphology, however, these eutectics differ greatly in most cases from ledeburite, such as, for instance, eutectic A + (Cr, Fe)₇C₃ formed in type R12 steels [3].

In this article are summarized the results of a study of the eutectic A + (W, Fe)₆C, crystallizing in fast-cutting steels (Figure 1). In these steels eutectic conversion $L \rightarrow A + (W, Fe)_6C$ is the concluding stage of hardening, and the form of the eutectic colonies, and frequently their internal structures are obscured by previously formed austenite. High-carbon Fe-W-C-alloys, the chemical compositions of which are presented in the table, were investigated.

The alloys were melted in magnesite crucibles on the basis of master alloys made of armo-iron, electrode graphite and metallic tungsten. The castings (each weighing 200 g) were hardened in the crucibles at a cooling rate of 100 deg/min or subjected to hardening-microstructural analysis by the method described in [3]. The specimens were analyzed by stereometric metallography methods.

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Acc. Nr:

AP0105527

Abstracting Service:
CHEMICAL ABST. 6-70

Ref. Code:

4R0370

124274y Segregation of chromium and manganese in cementite. Lev, I. E.; Malik, I. V.; Taran, Yu. N. (USSR). *Izv. Akad. Nauk SSSR, Metal.* 1970, (1), 13-17 (Russ). The microsepn. of Mn and Cr from cementite alloys Fe-C-Mn and Fe-C-Cr was studied by local x-ray anal. In Mn alloys direct segregation occurs; in Cr alloys inverse segregation occurs.

Jehudah Ellassaf

REEL/FRAME
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AUTHOR-- AKHMATOV, S., CORRESPONDENT

NEWSPAPER-- PRAVDA UKRAINY, JANUARY 10, 1970, P 1, COLS 1-4, AND P 2, COLS 2-4

ABSTRACT-- THE ARTICLE IS A BRIEF BIOGRAPHICAL PROFILE OF ZOT IL'ICH NEKRASOV, DIRECTOR OF THE DNEPROPETROVSK INSTITUTE OF FERROUS METALLURGY /APPOINTED IN 1952/, LAUREATE OF THE LENIN AND STATE PRIZES, HERO OF THE SOVIET UNION AND MEMBER OF THE UKRAINIAN ACADEMY OF SCIENCES. HE WAS ELECTED CORRESPONDING MEMBER OF THE UKRAINIAN ACADEMY OF SCIENCES IN 1951. IT WAS ON HIS SUGGESTION THAT THE INSTITUTE OF FERROUS METALLURGY WAS RELOCATED FROM KIEV TO DNEPROPETROVSK WHERE ITS STAFF GREW TO 1,200 PEOPLE. IN ADDITION TO BEING DIRECTOR OF THE INSTITUTE, NEKRASOV HEADS THE DEPARTMENT OF IRON METALLURGY. A. P. CHEKMAROV, K. F. STARODUBOV, V. D. CHEKHANOV, I. G. UZLOV, A. V. PRAZDNIKOV, AND YU. N. TARAN ARE MENTIONED AS HIS COLLEAGUES.

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TARANDA, N. N.

STATISTICAL METHODS OF EVALUATING PHYSICAL DEVELOPMENT OF THE POPULATION

UDC: 572.51:312.6

29 May 70

JPRS 55576

Article by L. Ye. Polyakov, N. N. Taranda, D. M. Malinitsky, Military Medical Academy, General S. M. Kirov (Director), Professor K. E. Ivanov, Leningrad, Moscow, Sovetskaya Zdravookhraneniye, Russian, No 2, 1972, Substantiated 8 September 1971, pp 17-22]

Physical development is one of the main general indices characterizing the level and shift of physical condition of the population and its different age-sex, ethnic, occupational, and other groups. Regular monitoring of physical development is an important component of the prophylactic direction developed for dynamic medical observation of the physical development of many population groups and especially the rising generation. The concern for the physical development of children and young people can be attributed to the fact that it is precisely among them that it is possible to successfully alter the shape and proportions of the body through physical education.

Such work becomes effective provided there is a scientifically substantiated method of assessing the level and dynamics of physical development. Soviet health statistics are constantly improving methods for group and individual evaluation of physical development.

In the present article we discuss the state and prospects of a statistical method for individual evaluation of physical development. Such evaluations are made in the USSR on the basis of specially developed tables of standards which are based on mathematical statistical methods.

The method presently in general use to evaluate individual physical development is the method of regression scales (or the method of correlation). A summary evaluation of individual physical development using this scale is more justified than the previously used index method, sigma rating by the method of R. Martin, and others.

The rating tables used with the regression scale method are made up for a qualitatively homogeneous (according to sex, age, permanent residence, occupation, etc) population group. The chief parameters of physical development

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UDC 546.45:538.311.33

PAPIROV, I. I., STOEYEV, P. I., and TARANENKO, I. A., Physicotechnical Institute, Academy of Sciences Ukr SSR

"Kinetics of Electrical Resistance Change in Deformed Beryllium During Annealing"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 35, No 6, Jun 73, pp 1241-1247

Abstract: This work is a continuation of a previously published work (PAPIROV, I. I., et al, Fizika Metallov i Metallovedeniye, Vol 34, p 1022, 1972) and pursues the goal of studying the effect of deformation degree of beryllium during rolling on the nature of its electrical resistance recovery. Beryllium ingots of 99.9% purity were rolled at 400°C with 30, 70, and 90% degrees of reduction. Samples measuring 0.4 x 0.4 x 50 mm were cut along the rolling axis by the electric spark method and electrical resistance was measured by the compensation method with an R-348 potentiometer. It was established that the electrical resistance recovery kinetics for beryllium is controlled by a thermally active process of dislocation annihilation as the dislocations moved in a field of peak internal stresses. A proposed equation for recovery of electrical resistance makes it possible to determine the average peak values of the athermal

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PAPIROV, I. I., et al., Fizika Metallov i Metallovedeniye, Vol 35, No 6,
Jun 73, pp 1241-1247

component of stresses for a known activation volume. Observed anomalies in electrical resistance recovery were associated with the complex and nonuniform substructure of polycrystalline beryllium after deformation. 5 figures, 1 table, 15 bibliographic references.

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PROCESSING DATE--20NOV70

TITLE--FORMATION OF A POLYMERIZED AND A CELLULAR STRUCTURE IN BERYLLIUM

AUTHOR--(05)--KORNIYENKO, L.A., TARANENKO, I.A., TIKHINSKIY, G.F.,
NIKLAYENKO, A.A., PAPIROV, I.I.

COUNTRY OF INFO--USSR

SOURCE--FIZIKA METALLOV I METALLOVEDENIE, VOL. 29, MAR. 1970, P. 619-624

DATE PUBLISHED---MAR70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--BERYLLIUM ALLOY, METAL MICROSTRUCTURE, BIBLIOGRAPHY, HIGH
PURITY METAL, METAL DEFORMATION, ANNEALING, THERMAL EFFECT, STRAIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3001/0070

STEP NO--UR/0126/70/029/000/0619/0624

CIRC ACCESSION NO--AP0125905

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2/2 032

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PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0125905

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE EFFECTS OF TEMPERATURE, DEGREE OF STRAIN, ANNEALING CONDITIONS, AND MATERIAL PURITY ON THE FORMATION OF POLYGONIZED AND CELLULAR STRUCTURES OF BERYLLIUM. IT IS FOUND THAT THE POLYGONIZATION OF BERYLLIUM IS MOST PRONOUNCED IN METAL ROLLED AT A SMALL REDUCTION AT TEMPERATURES RANGING FROM 600 TO 700 DEG C. FOR OBTAINING A CELLULAR STRUCTURE, HEAVILY DEFORMED BERYLLIUM SHOULD BE ANNEALED FOR ABOUT 1 MIN AT TEMPERATURES RANGING FROM 850 TO 900 DEG C. FACILITY: AKADEMIYA NAUK UKRAINSKOI SSR, FIZIKO-TEKHNIЧЕСКИЙ ИНСТИТУТ, ХАРЬКОВ, УКРАИНА SSR.

UNCLASSIFIED

USSR

UDC 615.331 (PRODIGIOSANUM).015.46

YERMOL'YEVA, Z. V., VAYSBERG, G. YE., BRAUDE, A. I., TARANENKO, L. A.,
LUSHINA, L. A., GIVENTAL', N. I., and SHCHERBAKOVA, E. G., Laboratory of
Medical Pathology and Laboratory of New Antibiotics, Chair of Microbiology,
TsIU [Central Institute for the Advanced Training of Physicians], Moscow

"The Effect of Prodigiozan Inhalation on the Immunological Reactivity of the
Human Body"

Moscow, Antibiotiki, Vol 18, No 1, 1973, pp 76-79

Abstract: Inhalation of prodigiozan promotes immune reactions in the human
body. Thus, in a group of 78 subjects aged 19 to 59, a single inhalation of
5 ml of a 0.04% prodigiozan aerosol (obtained under 0.5-0.8 atm at a rate of
12-15 L/min) increased the number of active neutrophils from 53 to 74% in 24
hrs in all subjects, and the increased phagocytic activity was maintained at
least up to the 48th hr after inhalation. At the same time, the inhaled
prodigiozan increased alkaline phosphatase activity in the neutrophils of
peripheral blood from 42 to 115 conventional units in 35 out of 39 subjects,
raised lysozyme concentration from 2.7 to 3.5 mcg/ml of blood serum in 12 out
of 27 subjects, and induced formation of interferon in titers of 7-13 units/
ml serum in 10 out of 10 subjects. It is concluded that a single inhalation of
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YERMOL'YEVA, Z. V., et al., Antibiotiki, Vol 18, No 1, 1973, pp 76-79
prodigiozan aerosol significantly stimulates humoral and cellular components
of human immunological reactivity.

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UDC 615.331(Prodigosanum).015.46

YERMOL'YEVA, Z. V., VAYSBERG, G. YE., TARANENKO, L. A., EYDEL'SHTEYN, S. I.,
Laboratory of Medical Cytology, Chair of Microbiology, and PROKHOROVA, I. I.
Central Institute of Advanced Training of Physicians and Aerosol Laboratory,
All-Union Scientific Research Institute of Antibodies

"Effect of Experimental Inhalation of Prodigosan Aerosols on Some Indices of
Immunobiological Reactivity"

Moscow, Antibiotiki, No 12, 1971, pp 1076-1081

Abstract: Inhalation of the bacterial polysaccharide prodigosan (a stimulant
of the reticuloendothelial system) resulted in satisfactory absorption of
the substance and a pronounced systemic reaction in rabbits. A single
inhalation (1 μ g/ml) caused the number of leukocytes in 1 mm of peripheral
blood to double within 24 hours and remain at that level for 6 to 8 days.
Single inhalation also greatly increased the number of neutrophils and stab
cells for several days. Twenty-four hours after inhalation, serum opsonin-
phagocytic activity increased almost 3-fold and did not return to the original
level until day 10. Intramuscular injection of prodigosan produced similar
blood shifts. Inhalation of prodigosan (50 to 200 μ g/ml) had no effect on
the ciliated epithelium of isolated kitten and puppy tracheas. These results
warrant clinical trials of prodigosan as a prophylactic agent.

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Acc. Nr.:

AP0032017

Ref. Code: UR 0475

PRIMARY SOURCE: Vrachebnoye Delo, 1970, Nr 1, pp 77-81

EFFICIENCY OF COMPLEX TREATMENT OF FRESHLY DETECTED PATIENTS
WITH PULMONARY TUBERCULOSIS FROM THE CLINICAL
AND FUNCTIONAL POINTS OF VIEW

M. I. Tashchuk, L. B. Akselrod and B. Z. Radovitskaya (Odessa)

It is concluded that complex treatment of patients with freshly detected tuberculosis of the lungs by means of antibacterial, hormonal and tissue preparations resulted in a larger incidence of complete absence of respiratory insufficiency than in those instances where only antibacterial treatment was employed. Complex therapy of pulmonary tuberculosis also resulted in improvement of electrocardiographic data.

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UDC 576.851.49.097.22:615.332 (STREPTOMYCINUM)

TARANENKO, T. M., VEYNBLAT, V. I., BAKHRAKH, Ye. E., MALININA, Z. Ye.,
ORLOVA, L. S., and ANDREYEVA, I. P., All-Union Mikrob Antiplague Institute,
Saratov

"Comparative Characteristics of Somatic Polysaccharides Isolated From Strain
EV and Its Streptomycin-Resistant Variant"

Moscow, Antibiotiki, Vol 18, No 3, 1973, pp 213-216

Abstract: Chemical and immunochemical comparisons were made of the lipopoly-
saccharide (LPS) and the main somatic antigens (MSA) isolated from the vaccine
strain EV NILEG of the *P. pestis* (I), and its nonimmunogenic streptomycin
resistant variant EV Str^r61 (II). The cells were grown on a solid nutrient
medium for 48 h at 28°, and the antigenic preparations were obtained from
acetone-dried cells. MSA was obtained by extraction with trichloroacetic
acid, purified on a column of Biogel P-200, and MSA-containing fractions sel-
ected on the basis of serologic reactivity and absorption at 280 nm. LPS was
isolated by water-phenol extraction; phenol was removed by dialysis and MSA
and nucleic acids by gel filtration on a Sepharise 2B column. For sugar
analyses LPS and MSA were hydrolyzed with H₂SO₄, and the monosaccharides
identified by thin-layer chromatography on silica gel. Infrared (IR) spectra
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TARANENKO, T. M., Antibiotiki, Vol 18, No 3, 1973, pp 213-216

were used for the detection of lipids. MSA was found to be present in greater quantities in I than in II, and in both cases lipids were absent. MSA isolated from I and II contained glucose, galactose, and glucosamine; however, twice as much glucosamine was present in MSA derived from I than in that derived from II, while more galactose was present in the MSA derived from II than in that from I. In addition, MSA isolated from II also contained mannose, and a sugar with an R_f value close to that of fucose. Gel precipitation with equine antiplague serum and the first component of MSA showed that the titer of the preparation derived from I was 2.5 times as great as that of the preparation from II. No significant chemical differences were found between LPS derived from I and II; both preparations contained virtually identical amounts of reducing substances (about 19%), glucosamine (2-2.5%), and limited quantities of proteins and nucleic acids. IR spectra for both preparations were virtually indistinguishable. The obtained data indicate that streptomycin does not affect the LPS component of the *P. pestis* cell wall, but alters the metabolic processes involved in the formation of MSA.

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UDC 615:373.3:576.851.45].011.5

TARANENKO, T. M., BAKHRAKH, Ye. E., ANDREYEVA, I. P., and EGROVIKOVA, T. P.,
"All-Union Scientific Research Antiplague Institute, "Mikrob", Saratov

"Significance of Certain Functional Groups in the Biological Activity of Pestin
PP"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 5, May 71.
pp 134-137

Abstract: It is generally believed that the activity of allergens used for various diagnostic tests is associated with alpha-amino groups and with the phenol groups of cyclic amino acids. This study was performed to investigate the role of free amino groups and cyclic amino acids in the allergenic properties of pestin PP -- a preparation recommended for detecting immuno-allergic shifts in patients with plague. Formalinization, acetylation, and iodination of pestin PP obtained from plague vaccine strain EV considerably reduced the allergenic activity of the preparation, while deamination completely abolished this activity. These results indicate that the allergenic activity of pestin PP is associated with both free amino groups and phenol groups in aromatic amino acids.

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UDC: 681.326

KUZNETSOV, V. A., KONTORER, V. G., TARANENKO, V. A., YAMPOL'SKIY, L. S.,
BRUNSHTEYN, Yu. G., KARLOV, A. G.

"A Digital Device for Measurement of Linear Displacements"

Kiev, Mekahnizatsiya i Avtomatizatsiya Upravleniya, No 2, Mar-Apr 73, pp
68-70.

Abstract: The Sevastopol' Instrument Building Institute has developed a device for measurement of linear displacements with output of the results of measurement in digital form. The device consists of a feeler threaded to mate with a revolving driver. As the driver turns to displace the feeler, the number of revolutions of the driver is sensed by counting the number of cycles of changing voltage in the circuit of a coil attached to the driver. The device can measure linear distances with an accuracy of ± 0.05 mm.

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Acc. Nr: **AP0051941**

Ref. Code: **DR0219**

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i
Meditsiny, 1970, Vol **69**, Nr **2**, pp **13-16**
EPINEPHRINE AND NOREPINEPHRINE ACTION ON THE ELECTROPHYSIOLO-
GICAL PROPERTIES OF SMOOTH MUSCLES IN THE PORTAL VEIN

V. M. Taranenko

A. A. Bogomolets Institute of Physiology of the Academy of Sciences of the Ukrainian
SSR, Kiev

By applying the method of double "sucrose gap" the effect of epinephrine and norepinephrine on the electrophysiological properties of smooth muscle cells in the portal vein were studied. Epinephrine and norepinephrine produced depolarization of the membrane, increased frequency and shortened duration of slow waves of spontaneous electric activity and a marked reduction of electrotonic potentials, e. g. resistance of the membrane. The maximum decrease of electrotonic potentials was seen to occur at the 4th minute of the epinephrine and norepinephrine action. The excitability of the smooth muscle cells under the effect of catecholamines increased. Elutriation with normal Krebs solution led to the restoration of electrotonic potentials and spontaneous electric activity. Preliminary investigations show that the stimulating effect of catecholamines is basically associated with increased permeability with respect to calcium and sodium ions.

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Vacuum Tubes

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UDC 621.385.6

KHOTYAINTEV, S. N., DERENOVSKIY, M. V., D'YACHENKO, S. M., TARANENKO, V. P.

"Powerful Electron Guns with Control Electrodes"

Kiev, Izvestiya vysshikh uchebnykh zavedeniy--Radioelektronika, Vol XIV, No 9, 1971, pp 997-1008

Abstract: A survey of foreign and Soviet papers on high-perveance electron guns with low voltage modulation is presented. The characteristic features of the structural elements, calculation techniques, control characteristics and operating characteristics of electron guns with grid control are investigated. The most prospective guns are guns with control grids located in front of the cathode. Guns with control posts appear effective for devices with high average power operating with a solenoid.

The study includes the characteristics of development of controlled guns, guns with control electrodes, a triode gun with the "natural" grid potential, the static amplification factor of the triode gun, operation of guns with grid potentials other than "natural," the lens effect of the grid, heating of the grid, grid emission, and designs of guns with control electrodes.

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KHOTYAINTEV, S. N., et al., Izvestiya vysshikh uchebnykh svedeniy--Radioelektronika, Vol XIV, No 9, 1971, pp 997-1008

The transverse components of the electron velocities in guns with control electrodes in front of the cathode and low voltage modulation are larger than in the analogous diode guns as a result of the lens effect of the grid cells. The magnitude of the transverse velocities is minimal for the "natural" grid potential. The average power of the gun is limited to the magnitude at which extraordinary grid heating takes place. Further improvements of the gun characteristics can be expected in guns with low temperature cathodes and in multiple beam systems. Application of a remote focusing electrode for modulation of the electron flux has low efficiency. Electron guns with control posts introduce significant distortions in the beam structure. They are most prospective for powerful devices in which focusing by a constant magnetic field is used.

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UNCLASSIFIED

PROCESSING DATE—30OCT70

TITLE—OIL AND GAS CONTENT IN LATE CAMBRIAN FORMATIONS —U—
AUTHOR—(104)—TARANENKO, YE.I., VASSOYEVICH, N.B., VYSOTSKIY, I.V., SOKOLOV,
B.A.

COUNTRY OF INFO—USSR

SOURCE—SOV. GEOL. 1970, 13(4), 66-79

DATE PUBLISHED—70

SUBJECT AREAS—EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS

TOPIC TAGS—PETROLEUM DEPOSIT, GEOLOGY, CRUDE OIL, NATURAL GAS, GEOGRAPHIC
LOCATION

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAME—3002/1875

STEP NO—UR/0215/70/013/004/0066/0079

CIRC ACCESSION NO—AP0129235

UNCLASSIFIED

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CIRC ACCESSION NU--AP0129235 UNCLASSIFIED
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. UPPER PROTEROZOIC NONMETAMORPHOSED
MARINE FORMATIONS ARE WIDELY DISTRIBUTED IN ANCIENT PLATFORMS IN ALL
CONTINENTS OF THE GLOBE. SCATTERED ORG. SUBSTANCE AND ACCUMULATIONS OF
OIL IN GAS ARE PRESENT IN NOTICEABLY HIGH AMTS. IN THESE ANCIENT ROCKS.
ALL THIS SUGGESTS THE POSSIBILITY OF DISCOVERING COM. OIL AND GAS
DEPOSITS IN THE PROTEROZOIC FORMATION OF ANCIENT PLATFORMS.
FACILITY: MOSK. GOS. UNIV., MOSCOW, USSR.

PROCESSING DATE--30OCT70

UNCLASSIFIED

USSR

TARANENKO, Z. I.

UDC 621.385.622

"Choosing the Focusing Voltage in a TWT and BWT with Periodic Electrostatic Focusing"

Kiev, Izvestiya VUZ -- Radioelektronika, Vol 13, No 8, 1970, pp 934-939

Abstract: Two principal causes of the change in electron energy in these tubes are cited: the difference in the static potentials characteristic of periodic electrostatic focusing; the interaction of the electrons with the high-frequency field. Using the example of the TWT, the author considers the quantitative relationships between the electronic efficiency and the limiting ratio between the voltages applied to the high- and low-potential electrodes. He begins by assuming that the gain parameter, the electronic efficiency, and the electron velocity dispersion at the output of the TWT with periodic electrostatic focusing are the same as in the TWT of the ordinary type with electromagnetic focusing. Then, the minimum permissible potential of the low-voltage electrodes can be equated to the optimal potential for the single-stage collector. He finds that for certain relationships of the electronic efficiency and the electrode potentials, loss of output power is caused by electron braking under the action of the high-frequency signal and the focusing electrostatic fields for both the

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TARANENKO, Z. I., Izvestiya VUZ -- Radioelektronika, Vol 13, No 8, 1970,
pp 934-939

TWT and BWT, and that for excessive values of the electrostatic potential ratio for the two electrodes the output power and efficiency of both tubes is limited by the halting of the exhausted electrons.

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NE ENKO, Z. P.

SO: JPRS 54019
9 SEP 71

UDC: 362.11(47-21)
LEVEL, STRUCTURE, AND DISTINCTIVE FEATURES OF EMERGENCY HOSPITAL CARE IN
DIFFERENT TYPES OF CITIES

Article by Ye. A. Loginov, V. V. Zhigalov, N. A. Semashko, N. I. Trubilin,
M. I. K. Sidorov, L. F. Bugay, A. K. Pysanov, Z. P. Trubilin, N. A. Semashko, N. I. Trubilin,
Yu. I. Baidakov, All-Union Scientific Research Institute of Social Hygiene and
Public Health Organization named N. A. Semashko, Moscow, Sovetskaya Zdravoohraneniye,
Kurskaya Oblast Health Department, Kursk, Sovetskaya Zdravoohraneniye,
Russian, No 7, 1971, submitted 16 February 1971, pp 18-25.

In spite of the knowledge accumulated by Soviet public health in the
area of planning and developing norms for medical care in hospitals, still
unstudied is the matter of bed requirements referable to emergency hospitals. Of special
interest is the development and the structure of such requirements. Of special
the beds allocated for emergency hospitalization in view of the specialized
emergency hospitals founded on the basis of Decree No 517 dated 5 July 1968
issued by the Central Committee of the CPSU and USSR Council of Ministers, "On
Measures for Further Improvement of Public Health and Development of Medical
Science in the Nation," as well as integration of emergency stations and
hospitals, as reflected in order No 608, dated 6 August 1968, issued by the
USSR Minister of Health.

In resolving planning and organizational problems pertaining to emergency
hospital care it is not deemed basic to be governed by official reports,
since the statistics on hospitalized patients include data on emergency hos-
pitalization only referable to surgical emergencies whereas a considerable
place is occupied by emergency hospitalization of therapeutic, obstetric-
gynecological, infectious, and other patients.

For the purpose of substantiating the structure of the beds allocated
for emergency hospitalization, the All-Union Scientific Research Institute of
Social Hygiene and Public Health Organization named N. A. Semashko, jointly
with the oblast health departments of Kostovskaya, Ul'yanovskaya, Kurskaya,
Kalinigradskaya, and Volgogradskaya oblasts and the Ministry of Health of
Bashkir ASSR, conducted a complex study to determine the level, scope, and
nature of emergency hospital care in different types of cities.

KRANENKO, Z. P.

SO: JPRS 55015
25 JAN 72

UDC: 362.11(47-21:47-22)

DISTINCTIONS IN LEVEL AND STRUCTURE OF HOSPITAL CARE FOR RURAL PATIENTS IN DIFFERENT TYPES OF CITIES

Article by Ye.A. Logunova, M.V. Potekhin, V.M. Shipova, N.T. Irubilin, I.K. Stryel, L.P. Bugun, A.E. Pilyasov, Z.P. Kravchenko, Ye.Ye. Kolesnikov, I.K. Hygiene and Public Health Organization, Institute of Social Medicine, A.P. Ulyanovskaya, and Kurakaya oblast health departments: Moscow, Sovetskoye Zdravookhraneniye, Russian, No 12, 1971, submitted 24 March 1971, pp 16-21]

Urban therapeutic institutions play an important role in rendering qualified and particularly specialized care for the rural population.

It is a known fact that the volume of medical care rendered to the rural population by urban institutions is increasing annually, however, to date this is not taken into consideration in planning urban public health care. In addition, there are still insufficient special investigations to substantiate the rural residents demand for specialized hospital and extramural care at different stages of organization of rural public health.

The absence of differentiated standards of the demands of the rural population with regard to special forms of medical care makes it imperative to pursue in-depth investigations of the level and distinctions of the demand for different forms of therapeutic and prophylactic care in concrete institutions of different types of cities.

For this purpose, the All-Union Scientific Research Institute of Social Hygiene and Public Health Organization, Moscow, A. Semashko, jointly with the oblast public health departments of Rostovskaya, Ulyanovskaya, Kurakaya, Vologodskaya oblasts and the Bashkir Ministry of Health conducted a complex study of the level and structure of hospital, polyclinic, and visiting consultation services offered to rural residents in the different cities.

In this article we submit the results of a study of the level and structure of hospital care rendered to the rural population in different types of cities in Rostovskaya, Ulyanovskaya, and Kurakaya oblasts; data pertaining to other bases are undergoing statistical processing.

USSR

SOBOLEV, N. N., SOKOVIKOV, V. V., TARANENKS, V. G.

UDC: 621.375.82

"Kinetic Model of the Formation of a Population Inversion in a Carbon Monoxide Gas-Discharge Laser"

Moscow, Kineticheskaya model' obrazovaniya inversii zaselennostey v gazo-razryadnom lazere na okisi ugleroda. Fiz. in-t AN SSSR. Lab. optiki nizko-temperatur. plazmy (cf. English above. Physics Institute of the Soviet Academy of Sciences. Laboratory of Low-Temperature Plasma Optics), Preprint No 34, 1973, 26 pp, ill., mimeo. (from RZh-Fizika, No 8, Aug 73, abstract No 8D1054 [résumé])

Translation: The populations of vibrational levels of CO are numerically calculated in the plasma of a CO-He laser. The system of kinetic equations describing processes of excitation and de-excitation of the vibrational levels of CO in the discharge is solved for different gas temperatures and pressures and different values of the parameter T_1^* characterizing pumping. The probabilities of vibrational transitions were calculated by the Hertzfeld formulas modified to account for anharmonicity of molecules. The resultant population distributions differ appreciably from Boltzmann distri-

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USSR

SOBOLEV, N. N. et al., Kineticheskaya model' obrazovaniya inversii zaselenostey v gazorazryadnom lazere na okisi ugleroda. Fiz. in-t AN SSSR. Lab. optiki nizkotemperat. plazmy, Preprint No 34, 1973

butions. The initial sections of the distribution curves are approximately described by the Trenor formula and are weakly dependent on the probabilities of transitions. The further behavior of the curves is determined by the ratios between the rate constants of the processes involved in the system of equations. Plateaus formed on the curves i.e., sections with a high vibrational temperature are a consequence of accounting for anharmonicity of molecules. The theoretical and experimental data agree satisfactorily, confirming the validity of the model on which the computations are based.

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TARANOV, A.I.

MONITORING NORTHERN HEMISPHERE TRANSMISSIONS
IN ANTARCTICA AND SOME OBLIQUE
SOUNDING SYSTEMS

Selected articles from the Russian-language journal Trudy
Arkticheskogo i Antarkicheskogo Nauchno-Issledovatel'skogo
Instituta, Vol 280, 1966, Leningrad.

CONTENTS

Regularity of Shortwave Transmission between Antarctica and the Northern Hemisphere (V. M. Delitskiy).....	Page 1
Survey of Some Oblique Sounding Systems and Selection of a System for Practical Application (A. I. Taranov).....	1

*Summary
Systemic*

- a -

(I - USSR - F)

SC1 JPRS 58208

12 February 1973

USSR

UDC 532.517

MILLIONSHCHIKOV, M. D., Academician, SUBBOTIN, V. I., Corresponding Member of the Academy of Sciences USSR, IBRAGIMOV, M. KH., TARANOV, G. S., and KOBZAR', L. L.

"Experimental Study of Turbulent Flow in Pipes With Artificial Wall Roughness"

Moscow, Doklady Akademii Nauk SSSR, Vol 207, No 6, 1972, pp 1292-1295

Abstract: The authors studied turbulent flow in circular pipes with regular, artificially created wall roughness. The roughness was created by cutting single and multiple cross threads and circular recesses on the inside surface of Duralumin pipes. There were 15 variants. The experiments were conducted in air ($Re = 5000-200,000$) and water ($Re = 70,000-1 \cdot 10^6$). It was found that the dependence of the resistance coefficient on the Reynolds number for the investigated types of rough surfaces differs from the relations obtained for sand-grain roughness or for commercial rough pipes. There was found to be an earlier hydraulic appearance of roughness. In most cases this effect occurs at $u_{\tau}k/\nu < 3$, where u_{τ} is the dynamic velocity, k the height of the roughness elements, ν the fluid viscosity. At Reynolds numbers ranging

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USSR

MILLIONSHCHIKOV, M. D., et al., Doklady Akademii Nauk SSSR, Vol 207, No 6, 1972, pp 1292-1295

up to 10^6 practically no interval is observed where a square resistance law would occur, in which λ for one and the same type of thread is determined only by the relative roughness height. The mean relative height of the roughness elements is far from being the complete characteristic of a rough surface. The resistance coefficient is considerably influenced by the pitch of the mutual arrangement of the roughness elements and their shape. Further studies are under way to determine the mechanism of the interaction between turbulent flow and roughness elements and to obtain generalizing relations and develop calculation procedures.

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USSR

UDC. 532.517

MILLIONSHCHIKOV, M. D., Academician; SUBBOTIN, V. I., Corresponding Member USSR Academy of Sciences; IBRAGIMOV, M. Kh.; TARANOV, G. S.; KOBZAR', L. L.

"Experimental Investigation of the Turbulent Current in Tubes With Artificially Roughened Walls"

Moscow, Doklady Akademii Nauk SSSR, vol 207, No 6, 1972, pp 1292-1295

Abstract: Asserting that the experimental and theoretical work on tubes with roughened walls lags behind similar analysis of currents in tubes with smooth walls, the authors describe experiments they performed to investigate turbulent flow in circular tubes of accurate design and with artificially roughened walls, the latter being created by cutting the inner surfaces of the duralumin with grooving and threading devices. The method of cutting is described in some detail, and a table of variants of these roughened tubes, showing diagrams of the cuts and their parameters, is given. The experiments were conducted with air and with water, the Reynolds numbers for each varying from 5000-200,000 and 70,000- 1.10^6 respectively. Curves for the resistance of the tubes with various

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USSR

MILLIONSECHIKOV, M. D., et al, Doklady Akademii Nauk SSSR, vol 207,
No 6, 1972, pp 1292-1295

types of cut along the inner walls are plotted. The authors recommend further research to help clarify the mechanism of current and wall interactions.

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USSR

TARANOV, I. YE. (Khar'kov)

UDC 538.4

"Sound Waves in a Magnetizable Medium"

Moscow, Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki, No 1, 1973, pp 15-22

Abstract: The paper deals with the propagation of small disturbances in a medium that is capable of becoming inhomogeneously and isotropically magnetized under the action of an electromagnetic field. It is shown that in such a medium, sound waves are possible that are of the same kind as those in a medium with constant magnetic susceptibility. However, the phase velocities of fast and slow magneto-sonic waves can acquire imaginary values, so that the phenomenon of instability arises in strong magnetic fields. A study is made of a diagram of the phase velocities for paramagnetic and diamagnetic materials, and for a medium with magnetic saturation. Consideration is given to the case of an incompressible medium. 6 figures. 6 references.

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USSR

LEGEYDA, V. I. and TARANOV, I. Ye.

UDC 532.5

"Flow About a Profile in a Magnetic Field, Perpendicular to the Flow Plane"
Moscow, Prikladnaya Matematika i Mekhanika, No 2, 1972, pp 232-238

Abstract: A problem dealing with flow about an arbitrary profile in a stream of nonviscous conductive fluid in a magnetic field, perpendicular to the flow plane, is reduced to a system of integral equations. The solution of this system coincides, to the exactness of the designations, with the solution of the problem on the convection of heat from small cylinders in a stream of fluids, obtained by King in 1914 with a potential stream, by the method of sources and studied in the case of small numbers $R_m (= 2R)$. In the case of circulationless flow an exact solution is obtained, which is illustrated by the example of flow about a round cylinder. Consideration is given to an asymptotic solution of the problem at large magnetic Reynolds numbers. 3 figures, 10 references.

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USSR

Aerospace Medicine

USSR

UDC 616.1:359.6

VASIL'YEV, A. B., First Lieutenant, Medical Corps, KOL'TSOV, A. I., Major, Medical Corps, and TARANOV, N. I., Candidate of Medical Sciences, Lieutenant Colonel, Medical Corps

"The Functional State of the Cardiovascular System in Naval Aviation Crews During Summer"

Moscow, Voenno-Meditsinskiy Zhurnal, No 4, 1973, pp 68-69

Abstract: The state of the cardiovascular system was evaluated in the case of 26 Naval pilots and navigators during and after a prolonged cruise. The studies showed that changes in the cardiovascular system were to a large extent dependent on the duration of the cruise. At the end of the cruise the average decrease in pulse rate was 4/min ($P < 0.05$); in comparison with the resting pulse rate, at the beginning of the cruise static muscular effort elicited a 30-40% increase in the pulse rate, in the middle of the cruise the average increase was 53%, and at the end of the cruise the mean increase was 65%. Arterial blood pressure decreased by 11% in the middle of the cruise for the entire crew, but in 8 individuals the decrease ranged from 15-20%. EKG studies conducted at the beginning of the cruise showed no changes. In the middle of the cruise the

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USSR

VASIL'YEV, A. B., et al., Voenno-Meditsinskiy Zhurnal, No 4, 1973, pp 68-69

electric systole was found to be prolonged, the amplitude of the P wave decreased by 34%, and changes in the R and T waves indicated decreased tonus of the sympathetic innervation and increased tonus of the parasympathetic innervation. In 7 subjects the T wave was flattened on physical exertion (1.5 to 2-fold), and in 3 individuals physical exertion caused the QRS complex to be prolonged. The EKG changes were more pronounced at the end of the cruise. It was also observed that after a 2 hr flight blood pressure and pulse rate were within the norm for most pilots and navigators. After two 1.5-2 hr flights at intervals of 15-20 min the systolic and diastolic pressure was increased by more than 10 mm Hg in the majority of the subjects, and the pulse rate increased by 10-15 beats/min. The reactions in the navigators were less pronounced than in the pilots, as a rule. After a 3 hr flight at the beginning of the cruise there was an increase in the systolic and the diastolic pressures, without a change in the pulse pressure. A similar flight in the middle of the cruise caused an increase in the diastolic pressure, while the systolic pressure remained unchanged or decreased; the pulse pressure fell by 15-20 mm Hg, on the average. The data show that long-term summer cruises elicit definite changes in the cardiovascular system, which become apparent at the end of the first month. Consequently, during long cruises there should be periodic evaluation of the cardiovascular system.

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USSR

UDC 669.14.018.5
SHATOV, YU. S., TARANOV, O. G., and RAKITINA, Z. A., Novocherkassk Scientific
Research Institute of Permanent Magnets
"Phosphorus-Doped YuNDK35T5 Alloy"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 11, 1973, p 69

Abstract: The article describes results of a study of the effect of phosphorus additions on the magnetic characteristics of the high-coercivity alloy YuNDK35T5. Iron-base alloys (35% Co, 15% Ni, 7% Al, 5.5% Ti, 3.0% Cu) containing 0.05, 0.1, 0.25, 0.30, 0.35, 0.5% phosphorus were studied. The phosphorus was introduced in the form of MP-1 copper phosphide and 10% ferrophosphorus. It was found that the coercive force, residual induction and maximum magnetic energy grow with increased phosphorus content and reach their maximum values when there is 0.1% P in the alloy. There is a sharp drop in the residual induction and magnetic energy with a further increase in the phosphorus content. The coercive force retains its maximum value up to 0.35% P, after which it likewise declines. The favorable effect of phosphorus additions on the alloy's magnetic parameters is probably due to a change in the shape

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USSR

SHATOV, YU. S., et al., Metallovedeniye i Termicheskaya Obrabotka Metallov,
No 11, 1973, p 69

anisotropy of the ferromagnetic alpha particles, which increase the magnetic
properties. Considering the low cost and abundant supply of copper phosphide,
prospects seem good for starting up the production of phosphorus-doped
YuNDK35T5 alloy.

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USSR

UDC: 621.372.061

GRINBERG, I. P., TARANOV, S. G.

"Compensation of the Input Capacitance of a Quadripole"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 3 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 3), Novosibirsk, 1970, pp 90-92 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A110)

Translation: The authors consider compensation of the shunting effect of the input capacitance and the capacitance of the connecting cable, which reduces the input impedance of a quadripole with an increase in the frequency of the input signal. A compensation circuit is proposed which utilizes an auxiliary RC network connected in parallel with the quadripole input. The parameters of the network are selected in such a way that the current produced by the input voltage is determined by the capacitance of the network. The stability of the system is investigated. Two illustrations, bibliography of two titles. N. S.

1/1

USSR

UDC: 621.317.3:2

BRAYKO, V. V., KOTSYUBA, Ye. N., VIZHENSKIY, A. D., TARANOV, S. G.

"A Precision Device for Measuring Weak Signals of Primary Converters"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 3 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 3), Novosibirsk, 1970, pp 75-76 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1A307)

Translation: Excellent resistance to interference and high precision in this measuring device are achieved by virtue of the selective properties of the circuit, in which differential feedback is used. A block diagram of the device is given and its operation is described. The error of the device, excluding the error of the output instrument is no more than 0.05 percent in the range of signals up to 1 mV at a carrier frequency of 1 kHz. E. L.

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UDC 621.375.126

USSR

TARANOV, S. G.

"Analysis of the Dynamics of a Self-Adjusting Resonance Amplifier by the Time Quantization Method"

Probl. tekhn. elektrodinamiki (Problems of Technical Electrodynamics), vyp. 23, Kiev, Naukova Dumka Press, 1970, pp 47-52 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9D88)

Translation: This article contains an investigation of the operation of a self adjusting narrow band voltage amplifier tuned to the basic harmonic of the input voltage. There is one illustration.

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USSR

KOLCHURINA, A. A., (Deceased), TARANOVA, G. P., and SMIRNOVA, L. B., State Control Institute of Medical and Biological Preparations imeni L. A. Tarasevich, Moscow

"Some Special Aspects of the Biological Properties of Influenza A2 Virus Strains Isolated in 1968-1970"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 71, p 492

Translation: A control analysis was performed on influenza A2 virus strains isolated in various years. Changes were found not only in antigenic structure, but also in other biological properties of the pathogen. In the process of this mutation, at first inhibitor-resistant strains disappeared, and then inhibitor-resistant viruses vanished from a mixed population of strains sensitive to inhibitors. Virus particles with reduced sensitivity to inhibitors were found, but no virus particles completely resistant to the inhibitors were observed in a population of A2 strains (1968-1970). The strains displayed a high replication rate of infectious virus and hemagglutinins and a weak capacity to replicate at 40°C.

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MEDICINE

JFKS 56109
26 MAY 1972

[illegible]

The content of gangliosides in the synaptosomal fraction from rabbit brain isolated by fractionation in a sucrose density gradient were 25.7, 14.6 of S-acetylmannosidic acid (S-AM), or 11.5, 4.8 of gangliosides per mg of protein (H-AM). Potassium with an organophosphorus inhibitor (OTI) of cholinesterase results in enrichment of the gangliosomes with gangliosides, the amount of which increased by 35% on the average; despite a decrease of 26.4% in total gangliosides separated in a thin layer of silica gel from the same 10 fractions as brain homogenate gangliosides; 3 fractions of sialylgangliosides, and 2 fractions of monoacylgangliosides are clearly separated. In addition, two polar spots produce the smallest polar fractions of monoacylgangliosides and 2 fractions of diacylgangliosides. The quantitative relations of ganglioside fractions are similar to those in brain with a low N-AMA content. The quantitative relations of ganglioside fractions are similar to those in brain with a low N-AMA content. The quantitative relations of ganglioside fractions are similar to those in brain with a low N-AMA content.

Gangliosides except that they have a higher content of the ganglioside fractions are similar to those in brain with a low N-AMA content. The quantitative relations of ganglioside fractions are similar to those in brain with a low N-AMA content.

H₂O fraction (but decreased in the GMA and OL fractions). Gangliosides composition of the gangliosides OPI both constant after potassium with a calichestase, derivative constant after potassium with gangliosides.

in the mixed enrichment value group. They are their characteristic substances specific to nervous tissue. Gangliosides are substances specific to nervous tissue. Gangliosides are a mixture of similarly constructed glycosphingolipids. The difference in the structure of the carbohydrate part of the molecule and in the amount of N-acetylneuraminic acid (N-AcNA) is the difference between the various gangliosides. (1 - USSR - C)

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II - USSR - C)

UDC 616.831-008.9-02:615.176.2.099

USSR

TARANOVA, N. P., and ROSENGART, V. I., Department of Biochemistry, First Leningrad Medical Institute imeni Academician I. P. Pavlov

"Fractional Composition of Brain Gangliosides Normally and During Intoxication with Organophosphorus Cholinesterase Inhibitors"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 71, No 3, Mar 71, pp 39-42

Abstract: Cerebral gangliosides obtained from healthy rabbits and rats were separated by means of thin-layer chromatography on silica gel into 9-10 fractions, which were classified according to their motility and the molar ratio between N-acetylneuraminic acid and sphingosine. Rat gangliosides differed from rabbit gangliosides by a smaller content of the G₃ fraction -- the main disialoganglioside -- and a correspondingly greater content of the two other disialogangliosides: G₂ and G_{2a}. After intramuscular administration of a lethal dose of organophosphorus cholinesterase inhibitor, rabbits developed distinct pathological signs, such as salivation, tremor, dyspnea, and fibrillation and cramps of skeletal muscles, while none of these disorders were observed in rats. Subsequent chromatographic tests revealed

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USSR

TARANOVA, N. P., and ROZENGART, V. I., Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 71, No 3, Mar 71, pp 39-42

that the total quantity of gangliosides did not change in the rat brain, while it decreased by 15% in the rabbit brain. The fractional composition of gangliosides did not change during intoxication with the cholinesterase inhibitor.

2/2

1/2 011 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--ON THE MEASUREMENTS OF THE HYDROXYL EMISSION IN TWILIGHT -U-
AUTHOR--(G2)-TARANOVA, O.G., TOROSHELIDZE, T.I.
COUNTRY OF INFO--USSR
SOURCE--KAZDEL IV, POLYARNYYE SIYANIYA I SVECHENIYE NOCHNOGO NEBA, 1970,
NR 18, PP 26-32
DATE PUBLISHED--70
SUBJECT AREAS--ATMOSPHERIC SCIENCES
TOPIC TAGS--TWILIGHT, HYDROXYL RADICAL, MEASUREMENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REF/FRAME--1994/0127 STEP NO--UR/3307/70/000/018/0026/0032
CIRC ACCESSION NO--AP0114518
UNCLASSIFIED

2/2 011
CIRC ACCESSION NO--AP0114518
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER DESCRIBES THE METHODS
USED FOR PROCESSING THE HYDROXYL EMISSION DATA OBTAINED IN TWILIGHT
OBSERVATIONS. VARIATIONS IN T SUBROT AND I SUBOH IN THE OH (5.2) AND OH
(4.1) BANDS OCCURRING IN TWILIGHT ARE SHOWN AS OBSERVED IN ABASTUMANI AND
ZVENIGOROD.

UNCLASSIFIED

PROCESSING DATE--020CT70

89

UNCLASSIFIED

UDC 576.851.45.095

USSR

GURLEVA, G. G., DOMARADSKIY, I. V., KHALYAPINA, Ye. Ye., ALUFIN, I. M.,
TARANOVA, V. N., PUSHNITSA, N. P., KOL'TSOVA, Ye. G., MARCHENKOV, V. I.,
SHCHEGLAKOVA, N. M., and GRIGOR'YAN, E. G., Rostov-on-Don Scientific Research
Antiplague Institute

"Biological Properties of Pasteurellae Isolated From Various Species of
Animals"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 11, 1971,
pp 54-58

Abstract: A comparative study was performed on *P. avicida*, *P. cuniculicida*,
B. avisepticus, *B. suis*, *B. bovis*, and *B. ovis* (a total
of 27 strains) isolated from chickens, pigs, suckling pigs, calves, steers,
sheep, house mice, and rabbits in various geographic areas in 1936-1967. The
strains as well as their sensitivity to antibiotics, nucleotide DNA compo-
sition, and virulence to albino mice, albino rats, and pigeons revealed that
they constitute a homogeneous group and belong to a single species -- *P.*
multocida. Significantly, all the strains investigated are sensitive to
colicines E+J, F, G, J+G, and S₅. If the findings are confirmed by supple-
mentary investigations, the colicin test may well be used for a differential
diagnosis of *P. multocida*.

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UDC 621.3.038.628

USSR

TARANTIN, I. I.

"A Possible Method for the Acceleration of Heavy Ions"

Moscow, Atomnaya Energiya, Vol 29, No 2, Aug 70, p 122

Abstract: A method suggested for the acceleration of heavy ions is a modification of the L. Alvarez method (Phys. Rev. 58, 192, 1940). The method is based on the principle of accelerating heavy ions in the cyclotron in resonance with one of the low harmonics. The ion orbit shifts along the accelerating interspace in such a way that after the ions are stripped as a result of their passing through the target located in the accelerating interspace and the orbital radius is shortened. The ion source thus appears inside of the orbit and is not in the way of a further acceleration of ions. This makes it possible to use more perfect ion sources in the cyclotron, producing ions with a relatively high charge. After stripping, the ions are accelerated in resonance with the initial frequency. Contrary to the classical variant of a cyclotron with its axisymmetrical magnetic field, a plane-symmetrical magnetic field is used: $B_z(x,y,0) = B_0(1+ay^2)$, where B_z = axial component of the magnetic field induction; $a < 0$; $|ay^2| \ll 1$; and x and y are directed along

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USSR

TARANTIN, I. I., Atomnaya Energiya, Vol 29, No 2, Aug 70, p 122
and across the accelerating interspace. A numerical example demonstrating
the use of the method is presented.

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UDC: 53.07/.08+53.001.5

USSR

TARANTIN, N. I., Joint Institute of Nuclear Research

"A Multiple-Rotation Mass Spectrometer"

USSR Author's Certificate No 305909, Division B, G, filed 23 Nov 68,
published 9 Aug 71 (from RZh-Fizika, No 4, Apr 72, Abstract No 4A436 P)

Translation: In order to achieve high dispersion in a multiple-rotation magnetic mass spectrometer (i. e., one with beam deflection through more than 360 degrees), short-focus axisymmetric or planosymmetric lenses are placed in the path of motion of the ions in a homogeneous or step-homogeneous magnetic field at points of radial foci of the beam. These lenses either eliminate the beam focus (defocusing lenses) or double the number of foci (focusing lenses) and are made in the form of diaphragms for cutting down the background of stray ions impinging on the receiver. Two modifications of such mass spectrometers are considered with a homogeneous and step-homogeneous field, and their magnification and dispersion are computed. E. A. Shafranovskiy.

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1/2 020
TITLE--ONE MORE POSSIBLE METHOD OF HEAVY ION ACCELERATION -U-
AUTHOR--TARANTIN, N.I.
COUNTRY OF INFO--USSR
SOURCE--ANL-TRANS-805
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--ION ACCELERATOR, HEAVY NUCLEUS, CYCLOTRON, IONIZATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1985/0774
CIRC ACCESSION NO--AM0101148
UNCLASSIFIED
PROCESSING DATE--160CY70
STEP NO--UR/0000/70/000/000/0001/0010

2/2 020
CIRC ACCESSION NO--AM0101148
ABSTRACT/EXTRACT--(U) GP-0- UNCLASSIFIED PROCESSING DATE--16OCT70
ABSTRACT. A METHOD OF ACCELERATION OF HEAVY
IONS IN THE CYCLOTRON WHEN IONS ARE STRIPPED IN THE PROCESS OF
ACCELERATION, IS SUGGESTED. SUFFICIENTLY INTENSE AND MONOENERGETIC
BEAMS OF HEAVY IONS OF WIDE SET (FROM ARGON IONS TO URANIUM IONS),
HAVING THE ENERGY ABOUT 10 MEV PER NUCLEON, CAN BE OBTAINED IN THE
CYCLOTRON OF RELATIVELY MODERATE DIMENSIONS (THE FINAL ORBIT RADIUS BEING
R EQUALS 200 CM).

UNCLASSIFIED

UDC 669.716:621.777

USSR

TARANTOV, S. N.

"Coarse-Grained Rim Sizes Along the Length of Shapes of Aluminum Alloys"

Metallovedeniye Splavov Legkikh Metallov-Sbornik, Moscow, "Nauka", 1970,
pp 15-21, resume

Translation: A method has been developed of exposing local hearths of shifting deformation on surface areas of the press-residue and the roll of aluminum alloys. A rim of constant width (along 82-86% of the product's length, measured from the front end) was identified in shapes and rods of the D16 and V95 alloys. Five figures, seven bibliographic references.

1/1

Photographic

UDC: 778.532.5

USSR

TARANTOV, YE. A.

"Analysis of Cameras With Prism Compensation"

Moscow, Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematofotografii, Vol 1,
No 1, Jan-Feb 72, pp 8-16

Abstract: Theoretical and experimental research was conducted on some systems of high-speed cameras with continuous film drawing and with compensation for shift of the image by a rotating prism. As a result, elements of the theory of optical prism compensation was refined, and equations linking the residual image shift and the frame exposure time to the basic elements of the prism compensator were derived. Methods of obturation were studied: by the prism mount, by rotating disks, and by stationary slit shutters. It was shown that with obturation by the prism mount, the residual image shift depends upon the brightness of the subject and the characteristics of the photographic layout. For cases of disk and slit obturation, optimal laws of distribution of the residual image shift according to the angle of prism rotation are found. 6 figures. 3 tables. 12 references.

1/1

Mechanical Properties

UDC 669.14.018.2

USSR

TARANTOVA, A. S., PEVZNER, L. M., LOMBERG, B. S., SOLOV'YEVA, G. G., and ZASLAVSKAYA, L. V.

"Martensite-Aged Steels with High Durability and Plasticity"

Moscow, Metallobeveniye i Termicheskaya Obrabotka Metallov, No 8, 1970, pp 70-74

Abstract: The purpose of the research described by this paper was to obtain martensite-aged steels based on the Fe-Ni-Co-Mo system with a durability of 240-280 kg/mm², and to study their structure, phase state, and mechanical characteristics. Alloys with 12-15% Ni, 13-17% Co, and 5-11% Mo with C 0.03% were checked. A more detailed study of these alloys was made on two levels of durability values. The chemical compositions and durabilities of the two are given in a table along with a third, the so-called Vascomax-350, for the sake of comparison.

The first two alloys have no added titanium or aluminum, as opposed to ordinary martensite-aged alloys, to avoid the formation of embrittling carbonitrides; the third contains 1.6-2% titanium. To obtain high durability with maximum plasticity, the steels had to be made with pure furnace charges. Vacuum induction melting

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USSR

TARANTOVA, A. S., et al., Metalloboveniyе Termicheskaya
Obrabotka Metallov, No 8, 1970, pp 70-74

in laboratory furnaces with reduction through cerium and calcium were used. The weight of the melt was 50 kg. A second table gives details of the thermal processing applied to the castings after forging and water-cooling. In addition to this, the castings were analyzed chemically and by X-ray analysis. The results of the tests for the three melts as well as for standard brands ON18K9M5T and EI643 are given in a third table.

2/2

1/2 023 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--PARAMAGNETIC RELAXATION OF MACRORADICALS STABILIZED IN GAMMA
IRRADIATED POLYCAPROLACTAM -U-
AUTHOR-(03)-VONSYATSKIY, V.A., TARANUKHA, O.M., LEBEDEV, YA.S.

COUNTRY OF INFO--USSR

SOURCE--TEOR. EKSP. KHIM. 1970, 6(2), 235-42

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY, PHYSICS

TOPIC TAGS--EPR SPECTRUM, FREE RADICAL, GAMMA RADIATION, POLYMER
STRUCTURE, CAPROLACTAM, PARAMAGNETIC RELAXATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0924

STEP NO--UR/0379/70/006/002/0235/0242

CIRC ACCESSION NO--AP0137952

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137952

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE PORTIS CASTNER MODEL (A. M. PORTIS, 1953; T. G. CASTNER, 1959) DOES NOT ALWAYS APPEAR ACCEPTABLE FOR THE DESCRIPTION OF SATN. OF EPR SIGNALS OF RADICALS STABILIZED IN THE POLYMER MATRIX IN THE IRRADN. PROCESS. USE OF THE CONCEPT OF CHAOTIC SPECTRAL DIFFUSION ELIMINATES THE DISCREPANCY BETWEEN EXPTL. RESULTS AND THE THEORETICAL MODEL. THE RATE OF SPECTRAL DIFFUSION APPEARS TO BE A PARAMETER WITH THE AID OF WHICH LOW FREQUENCY MOTION IN POLYMER CHAINS IN THE VICINITY OF RADICAL CENTERS MAY BE STUDIED. FACILITY:
INST. KHIM. VYSOKOMOL. SOEDIN., KIEV, USSR.

UNCLASSIFIED

1/2 038

UNCLASSIFIED

PROCESSING DATE--09OCT70

TITLE--EFFECT OF RADIOACTIVE RADIATION ON ELECTRON PARAMAGNETIC
CHARACTERISTICS OF MACRORADICALS IN GAMMA IRRADIATED POLYCAPROLACTAM -U-
AUTHOR--(03)--TARANUKHA, O.M., VONSYATSKIY, V.A., LEBEDEV, YA.S.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(4), 898-901

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--CAPROLACTAM, STRESS RELAXATION, POLYMER, GAMMA RADIATION,
ACTIVATION ENERGY, PARAMAGNETISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1992/2028

STEP NO--UR/0020/70/190/004/0898/0901

CIRC ACCESSION NO--AT0112983

UNCLASSIFIED

2/2 038

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AT0112983

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE RELAXATION PROPERTIES OF
MACRORADICALS IN POLYCAPROLACTAM (1) IRRADIATED WITH 6-250 MEGARADS OF
GAMMA RAYS WERE STUDIED. SPECTRAL DIFFUSION MAY HAVE OCCURRED DUE TO
RANDOM MOTION OF MACROMOL. CHAINS ABOUT THE SPIN CENTER AT 77DEGREESK,
THE MOTION INTENSITY BEING PROPORTIONAL TO THE IRRADN. DOSE. THE
ACTIVATION ENERGY OF SPECTRAL DIFFUSION WAS SIMILAR TO 0.9 KCAL-MOLE.
FACILITY: INST. KHM. VYSOKOMOL. SOEDIN., KIEV, USSR.

UNCLASSIFIED

USSR

UDC: 538.4

YERMAKOV, V. I. and TARAPOV, I. Ye.

"Magnetohydrodynamic Ball Bearing"

Riga, Magnitnaya gidrodinamika, No 2, 1972, pp 117-122

Abstract: The theory of a magnetohydrodynamic ball bearing is considered in a situation in which the conducting liquid motion is stationary in a small gap between two eccentrically placed spheres, each considered to be ideally conductive and with a potential difference between them. The ball bearing is in an external uniform magnetic field. The outer sphere is fixed while the inner rotates with constant angular velocity. It is assumed that the difference between the radii of the spheres is small compared to the radii themselves such that the ratio of the difference to the radius can be neglected. Ordinary and magnetic Reynolds numbers are also assumed small, thus permitting inertial terms and induced magnetic fields to be ignored in the equations of motion. The theory of lubrication of the ball bearing by the conducting liquid is developed.

1/1

USSR

UDC 538.4

TARAPOV, I. Ye.

"On the Effectiveness of Magnetohydrodynamic Bearings"

Riga, Magnitnaya Gidrodinamika, No 4, Oct-Dec 71, pp 63-74

Abstract : Principal schemata of radial magnetohydrodynamic (MHD) bearings are analyzed from the viewpoint of their effectiveness, that is to say, the total energy supplied to the bearing per unit carrying capacity, assuming a littleness of radial clearance and Reynolds numbers ($\delta/R \ll 1$ and $\omega \delta^2/\nu \ll 1$). It is demonstrated that the effectiveness of MHD bearings is higher than that of bearings with neutral lubrication, particularly at high Hartmann numbers. Besides, the outer electromagnetic field in MHD bearings can be selected so that the friction moment in the bearing will be lowered. The schema of insulators (surfaces of pivot and shaft are absolutely non-conducting) possesses an advantage over the schema of conductors (surfaces are absolutely conducting). Calculation results are presented of a MHD bearing of finite length of the schema of insulators in the case of a radial outer magnetic field. A bearing of the schema of insulators in a uniform magnetic field is analyzed and the most beneficial field orientation with respect to the loading has been determined. Six illustr., 20 formulas, two biblio. refs.

1/1

USSR

UDC 669.184.266:14.018.2

5

KACHUR, B.K., KUKURUZYNYAK, I.S., NIKIFOROV, B.V., TARAPUROV, N.P., UMNOV, V.D.
POGORELYY, V.P., GALATON, YE.G., KHARCHENKO, B.V., and PLOKHIIKH, V.A.
(Ukrainian Scientific Research Institute of Metals, Krivoy Rog Metallurgical
Plant)

"Smelting of Low-Alloy Steel in a 130-ton Converter"

Moscow, Metallurg, No 9, Sep 71, pp 14-16

Abstract: A description is given of the technology of smelting low-alloy steels (OST-1, OST-2, 25G2C, and 35GC) in 130-ton oxygen converters at the Krivoy Rog Metallurgical Plant. Pig iron (881 kg per ton of steel) containing 0.6-0.9% Mn, 0.4-0.8% Si, not more than 0.06% S, and not more than 0.1% P, is poured into the converter at 1250-1350°C. Fresh burnt lime (65 kg), limestone (15-20 kg), and fluorspar (2-5 kg) per ton of steel were used as slag forming materials. The use of liquid alloying elements (75% FeMn, 65% FeSi and SiMn) in the ladle makes it possible to reduce the expenditure of ferroalloys, to improve the macro- and microstructure of the metal, and to minimize the content of nonmetallic inclusions. The steel obtained satisfies the requirements of GOST 5058-65.

1/1

- 50 -

USSR

UDC 669.296:620.18:669.017.11

IVANOV, O. S., ADAMOVA, A. S., TARARAYEVA, YE. M., and TREGUBOV, I. A.,
Struktura Splavov Tsiirkoniya (The Structure of Zirconium Alloys), Akademiya
Nauk SSSR, Izd-vo "Nauka," Moscow, 1973, 199 pp

Translation of Annotation: A critical generalization is presented of investigations published until 1970. The structure of zirconium alloys in states of equilibrium and inequilibrium is examined. The structure in the state of equilibrium, discussed in the first part of the book, is analyzed from structural diagrams of binary and ternary systems on a zirconium base. In the second part general rules are given for the formation of metastable phases in zirconium alloys and also the structure of alloys in inequilibrium state in concrete diagrams of binary and ternary alloys. A list of the investigated systems is presented. The publication is intended for investigators, including scientists, metallurgists, and mechanical engineers working in the fields of investigation, development, and production and application of zirconium alloys; it is also intended for teachers and students at metallurgical and mechanical higher institutes of learning. Eight tables, 222 figures, 594 bibliographic references.

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IVANOV, O. S., et al., Izd-vo, "Nauka," Moscow, 199 pp

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IVANOV, O. S., et al., Izd-vo, "Nauka," Moscow, 199 pp

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USSR

UDC: 537.312.62

SKVORTSOVA, I. L., TARARAYEVA, Ye. M., SHMIDT, V. V., RAYEVSKIY, I. I.

"Effect of Heat Treatment on the Critical Currents of Binary Alloys of Niobium With Zirconium and Titanium"

Moscow, Sverkhprovodyashchiye splavy i soedin.--sbornik (Superconductive Alloys and Compounds--collection of works), "Nauka", 1972, pp 101-111 (from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12 D561 [résumé])

Translation: Critical current is studied as a function of external magnetic field strength for Nb-Zr and Nb-Ti alloys of different concentrations and after different annealing temperatures. The experimental data were related to existing concepts on the flow of transport current in rigid superconductors. This led to the following conclusions. Transition to the normal state in the alloy Nb-5 at.% Zr takes place as a result of destruction of electron pairs when they have reached a critical velocity. Destruction of superconductivity in alloys of Nb with 55 and 75 at.% Zr, and with 55 and 80 at.% Ti takes place due to the motion of superconducting vortices. A direct relation is found between the annealing temperature of these alloys and the force of adhesion of superconducting vortices to the

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USSR

SKVORTSOVA, I. L. et al., Sverkhprovodyashchiye splavy i soyedin., "Nauka", 1972, pp 101-111

macrononhomogeneities which are segregated during heat treatment. Seven illustrations, One table, bibliography of fourteen titles.

1/2 016
UNCLASSIFIED
TITLE--CONCENTRATION OF ENZYMIC CULTURE SOLUTIONS -U- PROCESSING DATE--16OCT70
AUTHOR--(02)--TARARYKOV, G.M., KOROBOV, YE.B.
COUNTRY OF INFO--USSR
SOURCE--FERMENT. SPRIT. PROM. 1970, 36(1), 24-6
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--CONTINUOUS CULTURE, AMYLASE, PROPANE, WATER, DEHYDRATION,
ENZYME ACTIVITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1986/1710 STEP NO--UR/0071/70/036/001/0024/0026
CIRC ACCESSION NO--AP0103476
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0103476

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHOD IS BASED UPON THE FACT THAT PROPANE, WHICH EASILY LIQUEFIES, WILL REMOVE H SUB2 O FROM AQ. SOLNS. BY FORMATION OF A GAS HYDRATE, E.G. C SUB3 H SUB9.17H SUB2 O (1). THE COMPD. IS NOT STABLE, AND WILL DECOMP. AS A FUNCTION OF THE CONC., WHICH IN TURN IS DETD. BY PRESSURE AND TEMP., THE ADJUSTING OF WHICH CAN CAUSE I TO PPT. AT 0-5DEGREES. H SUB2 O WAS REMOVED FROM CULTURES CONTG. AMYLOLYTIC ENZYMES. NO AMYLOLYTIC ACTIVITY IS LOST AND ACTIVITY IS ABOUT EVENLY DISTRIBUTED BETWEEN THE REMAINING CULTURE SOLN. AND THE PPTD. I.

FACILITY: VORONEZH. TEKHNO. INST., VORONEZH, USSR.

UNCLASSIFIED

TARARYSHKIN, V. I.

UDC 669.716:621.745.55

METHOD OF PRODUCING COMPOSITE ALUMINUM ALLOYS WITH AN EQUIAXIAL STRUCTURE
[Article by R. R. Malinovskiy and V. I. Tararyshkin, All-Union Institute of Light Alloys: Ordzhonikidze, Zvezdnyi Vozdukh, Tsvetnaya Metallurgiya, Russian, No 6, 1971, signed to press 16 June 1971, pp 139-143]

The increase in the need for light heat-resistant materials is forcing investigators to improve the already existing alloys and to develop new composites as well as new methods for casting such alloys. Taking into account that the crystals of aluminides of refractory metals (Mn, Cr, Fe, Zr, etcetera) are distinguished by their high degree of hardness and heat resistance, it is feasible to strengthen the aluminum matrix with such phases. However it is not enough to merely produce an aluminum alloy with an elevated amount of these intermetallic crystals, it is necessary that they be very dispersed and uniformly distributed in the structure.

For the purpose of reducing the size of the crystal structure of such alloys we have developed a method of two-stage crystallization [1]. The essence of the method involves the separation of the crystallization into two stages. The first stage takes place in a special device, immediately in front of the crystallizer, at a high rate of cooling. Cooling of the thin jets or drops of the melt takes place below the temperature of the liquidus with the formation of primary intermetallic crystals. The as-yet insufficiently obtained liquid metallic suspension is guided into the crystallizer, where the second stage of crystallization is accomplished, i.e., the ingot is shaped and crystallization ensues. The high cooling rate of the alloy at the first stage ensures reduction in size of the crystal structure of the ingot. The devices for chilling the metallic flow in front of the crystallizer were also suggested previously in [2-4].

JAS 55880
4 May 72

-23-

TARARYSHKIN,

UDC 669.716:621.745.55

EFFECT OF SURFACE-ACTIVE SUBSTANCES ON INTERMETALLIDE CRYSTAL GROWTH
[Article by R. N. Golodovskiy, V. I. Tararyshkin, All Union Light Alloy Institute; Moscow, Izvestiya Vsesoyuznogo Nauchno-Issledovatskogo Tsentra Metallografiya, Russian, No 1, 1972, submitted 2 October 1970, pp 112-116]

At this time, aluminum alloys with primary intermetallic crystals in the structure are being developed and finding application. The inoculation of intermetallic crystals in such alloys by the addition of surface-active elements is almost an uninvestigated area. There are a few papers touching on this problem [1-3].

From the general theory of inoculation (P. A. Rebinde, et al), it is known that surface-active elements lower the surface tension of a solution. Strictly speaking, the surface tension at the crystal-melt interface should decrease; however, in view of the absence of such experimental data, we frequently work with the variation of the surface tension at the melt-gas interface [1] and indicate the defined relation between them [4].

Solubility data for elements in intermetallic compounds

Element	Solubility in the intermetallic phase					
	ZnAl ₃	FeAl ₃	FeAl ₂	FeAl	Co ₂ Al ₃	Al ₂ Al ₃
Be	yes	yes	yes	yes	-	-
Mg	no	no	no	no	no	no
Zn	-	yes	-	no	no	no
Cd	-	-	yes	no	no	no
Li	-	-	-	no	-	-
Cu	-	-	yes	yes	yes	yes

A. M. Kerol'kov demonstrated that in binary and more complex aluminum alloys with Fe, Mn, Cr and Ni, reduction of the surface tension is observed on addition of Na which is surface active with respect to aluminum. For example, Na, Cd, Li and Zn are such elements.

It is desirable that the introduced elements not only facilitate nucleation of the crystals but also retard their growth. The latter can be observed if the introduced elements are insoluble in the crystallizing phase. Some published data on the solubility of elements in intermetallic compounds are presented in the table.

JPRS 55942
7 May 72

RYSHKIN, V. I.

The increase in the need for light heat-resistant materials is forcing investigators to improve the already existing alloys and to develop new composites as well as new methods for casting such alloys. Taking into account that the crystals of aluminum alloys, taking into account that hardness and heat resistance, it is feasible to strengthen the aluminum matrix with such phases. However it is not enough to merely produce an aluminum alloy with an elevated amount of their intermetallic crystals, it is necessary that they be very dispersed and uniformly distributed in the structure.

For the purpose of reducing the size of the crystal structure of such alloys we have developed a method of two-stage crystallization [1]. The essence of the method involves the separation of the crystallization into two stages. The first stage takes place in a special device, immediately in front of the crystallizer, at a high rate of cooling. Cooling of the thin jets or drops of the melt takes place below the temperature of the liquidus with the formation of primary intermetallic crystals. The second stage of crystallization, where the metallic suspension is refined into a finely obtained liquid metallic crystals. The as-yet unfinished. The high cooling rate of crystallization ensures reduction in size of the crystal structure of the ingot. The device for chilling the metallic flow in front of the crystallizer were also suggested previously in [2-4].

-23-

METHOD OF PRODUCING COMPOSITE ALUMINUM ALLOYS WITH AN EQUIAXIAL STRUCTURE

Article by R. R. Melnikov and V. I. Ryshkin, All-Union Institute of Light Alloys, Ordzhonikidze, Izvestiya Vsesoyuznogo Nauchno-Issledovatskogo Tsentra Legkoye Metallovedeniya, No. 6, 1971, signed to press 16 June 1971, pp 139-143.

UDC 609.716:621.745.55

11/11/74 558160

USSR

MALINOVSKIY, R. R., TARARYSHKIN, V. I.

UDC 669.71.018.9

"New Direction in Refinement of the Crystal Structure of Ingots"

Metalloved. splavov legkikh met. -- V sb. (Physical Metallurgy of Alloys of Light Metals -- collection of works), Moscow, Nauka Press, 1970, pp 112-118 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G200)

Translation: A method of two-stage crystallization of alloys based on aluminum having a temperature crystallization interval predominately with primarily crystallizing intermetallic compounds is proposed, theoretically founded, and experimentally confirmed. As a result of applying this method making use of a water-cooling trough (cone) or atomizing the melt into drops, it is possible to refine the crystal structure of the ingots appreciably. There are 7 illustrations and a 10-entry bibliography.

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USSR

UDC 669.716:621.745.55

MALINOVSKIY, R. R., and TARARYSHKIN, V. I.

"A New Trend in the Commintion of the Crystalline Structure of Ingots"

Metallovedeniye Splavov Legkikh Metallov-Sbornik, Moscow, "Nauka", 1970,
pp 112-119, resume

Translation: A method of two-stage crystallization of alloys having a temperature interval of crystallization, particularly with initially crystallizing intermetallic compounds, is suggested, theoretically substantiated, and experimentally verified. Thanks to the use of this method by means of a water-cooling pan (cone) or atomization of the melt to drops, the crystalline structure of ingots can be comminuted considerably. Seven figures, ten bibliographic references.

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AUTHOR-- TARASENKO, A. CORRESPONDENT

TITLE-- A STRONG TEAM

NEWSPAPER-- RABOCHAYA GAZETA, JANUARY 14, 1970, P 2, COLS 1-3

ABSTRACT-- IVAN NIKOLAYEVICH PLAKSIN, CHIEF ENGINEER OF THE MOSCOW PIPE PLANT, AND YE. M. KRICHEVSKIY, HEAD OF THE CENTRAL PLANT LABORATORY, TELL ABOUT THE COLLABORATION BETWEEN THEIR PLANT AND THE DNEPROPETROVSK ALL-UNION SCIENTIFIC-RESEARCH PIPE INSTITUTE, ITS DEPARTMENT OF WELDED PIPE, HEADED BY DOCTOR OF TECHNICAL SCIENCES B. D. ZHUKOVSKIY, AND DEPARTMENT OF HEAT TREATMENT /S. L. VOYTSELENOK AND V. M. YANKOVSKIY/. THE INSTITUTE, HEADED BY Z. I. NEKRASOV, HOLDS ANNUAL COORDINATION MEETINGS FOR THE ENTIRE PIPE INDUSTRY OF THE SOVIET UNION.

19570972

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009

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--COMPLEX OXALATES OF MANGANESE(II) STUDIED BY A SOLUBILITY METHOD

AUTHOR--(03)-SMYSHLYAYEV, S.I., VOYTKO, L.M., TARASENKO, A.G.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., PISHCH. TEKHNOL. 1970, (1), 49-5

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--OXALATE, COMPLEX COMPOUND, MANGANESE COMPOUND, IONIC BONDING,
SOLUBILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1571

STEP NO--UR/0322/70/000/001/0049/0050

CIRC ACCESSION NO--AT0116979

UNCLASSIFIED

2/2 009

CIRC ACCESSION NO--AT0116979
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT. THE SOLY. OF MNC SUB2 O SUB4 IN
AQ. SOLNS. OF NA AND K OXALATES (CONCNS. OF 0.0047-0.1128M) WAS STUDIED
AT 25DEGREES. STABILITY CONSTS. KAPPA OF THE OXALATE COMPLEXES WERE
CALCD. FROM THE DEPENDENCE OF KAPPA ON IONIC STRENGTH MU THE KAPPA AT
MU EQUALS 0 WAS DETD. AS KAPPA EQUALS 1.5 TIMES 10 PRIME NEGATIVE6 AND
2.5 TIMES 10 PRIME NEGATIVE6 FOR NA SUB2 C SUB2 O SUB4 AND K SUB2 C SUB2
O SUB4 SOLNS., RESP. SOLY. OF MNC SUB2 O SUB4 IN H SUB2 O AT 25DEGREES
WAS DETD. AS 0.003 MOLE PER L.
INST., KRASNODAR, USSR. FACILITY: KRASNODAR. POLITEKH.

UNCLASSIFIED

TARASENKO, D. A.

UDC 551.511.12

PROPOSALS FOR DESIGNING MODELS OF THE INTERNATIONAL STANDARD ATMOSPHERE
[Article by Professor S. S. Gerasimov, E. D. Zhurav, N. A. Yefremova, M. Ya. Kalkin, Candidate of Geographic Sciences Yu. P. Kozlov, D. A. Tarasenko, Professor Ye. G. Shvachkovskiy, L. V. Shchegoleva, Central Aerological Observatory, Moscow, Izvestiya Gidrometeoizvestiya, Russian, No 2, 1972, sub-
mitted 6 July 1971, pp 36-48]

A study was made of the vertical profile of the mean annual temperature of the troposphere and also models of the standard atmosphere for different latitudinal zones and possible longitudinal variations. The characteristic of the data used to construct the models of the standard atmosphere is presented.

Introduction

The present proposals with respect to expansion of the international standard atmosphere are presented in the procedures for execution of the resolutions of the meeting of the Working Group of the ISO [International Standardization Organization] TR-20/RC-6 26-29 May 1969. The working group adopted the resolution to change the USA (A. E. Cole) and the USSR (Ye. G. Shvachkovskiy) with preparing the design for models of the international standard atmosphere for altitudes of 20-60 km (the mean distribution and model reflecting the latitudinal and seasonal variations). In the resolution there is a recommendation regarding the necessity of selecting the temperature profile closest to the mean annual profile with respect to the Northern Hemisphere for the mean model. At the meeting of the working group, it was recognized as desirable to expand the standard atmosphere to 80 km, considering the data in the 60-80 km layer as a supplement to the basic profile.

The given proposals were presented by the Soviet Union for examination by the Sixth Working Group of the Twentieth Technical Commission of the International Standardization Organization (ISO/TC-6 - 6) -- Standard Atmosphere -- a meeting of which was held in France (Poitiers) in February 1970.

SPRS 55893
4 May 72

025
UNCLASSIFIED
PROCESSING DATE--30OCT70
TITLE--VERTICAL DISTRIBUTION OF THE MAIN METEOROLOGICAL PARAMETERS AND
LARGE SCALE PROCESSES IN THE STRATOSPHERE AND MESOSPHERE -U-
AUTHOR--(05)--GAYGEROV, S.S., ZAYCHIKOV, S.P., KALIKHMAN, M.YA., SEDOV,
V.YE., TARASENKO, D.A.
COUNTRY OF INFO--USSR
SOURCE--COSPAR, PLENARY MEETING, 13TH, LENINGRAD, USSR, MAY 20-29, 1970,
PAPER. 42P
DATE PUBLISHED--70
SUBJECT AREAS--ATMOSPHERIC SCIENCES
TOPIC TAGS--STRATOSPHERE, MESOSPHERE, VERTICAL PROFILE, TEMPERATURE,
ATMOSPHERIC CIRCULATION, METEOROLOGIC ROCKET, OROGRAPHY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0005
CIRC ACCESSION NO--AT0125845
STEP NO--UR/0000/70/000/000/0042/0042
UNCLASSIFIED

2/2 025

CIRC ACCESSION NO--AT0125845
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT. DESCRIPTION OF VERTICAL TEMPERATURE PROFILES AND GLOBAL CIRCULATION PATTERNS IN THE STRATOSPHERE AND MESOSPHERE, USING ROCKET DATA FROM RESISTANCE THERMOMETER, THERMISTOR, AND GRENADE MEASUREMENTS. THE OBTAINED MEAN TEMPERATURE DISTRIBUTION AS A FUNCTION OF ALTITUDE IS COMPARED WITH DIFFERENT STANDARD AND REFERENCE ATMOSPHERES. SEASONAL AND LATITUDINAL TEMPERATURE VARIATIONS ARE CONSIDERED TOGETHER WITH LONGITUDINAL VARIATIONS IN THE NORTHERN HEMISPHERE. ANALYSIS OF PRELIMINARY GLOBAL CIRCULATION PATTERNS IN THE UPPER STRATOSPHERE AND LOWER MESOSPHERE SHOWS THAT SUMMER ANTICYCLONIC CIRCULATION IS POLARLY SYMMETRICAL AND IS PRACTICALLY THE SAME IN BOTH HEMISPHERES. WINTER CIRCULATION IN THE SOUTHERN HEMISPHERE IS LESS PERTURBED DUE TO THE OROGRAPHY AND UNIFORMITY OF THE UNDERLYING SURFACE IN THIS HEMISPHERE.
FACILITY: GLAVNCE UPRAVLENIE GIDROMETEOROLOGICHESKOI SLUZHBY SSSR, MOSCOW, USSR.

UNCLASSIFIED

USSR

TARASENKO, F. P., SHULENIN, V. P.

"One Simple Method of Comparison of the Powers of Structure d Matching Tests"

Tr. Sib. fiz.-tekhn. in-ta pri Tomsk. un-te [Works of Siberian Institute of Physics and Technology of Tomsk University], 1973, No 63, pp 147-153
(Translated from Referativnyy Zhurnal - Kibernetika, No 8, 1973, Abstract No 8 B168 by D. Chibisov)

Translation: The statistics of many nonparametric criteria of agreement can be looked upon as estimates of some distance $\rho(F,G)$ between hypothetical and alternative distributions. It is affirmed that the power of the corresponding criteria is determined by the values of $\rho(F,G)$ and recommendations are given for comparison of powers on this basis.

Abstractor's note. This method of comparison of powers is incorrect. For example, for the Kolmogorov criterion, the power should then depend only on $\sup|F(x)-G(x)|$, which is of course not so.

1/1

B. Mathematical Statistics

USSR

TARASENKO, F. P.

"Review of Basic Concepts and Methods of Nonparametric Statistics"

Tr. Sib. fiz.-tekhn. in-ta pri Tomsk. un-te [Works of Siberian Institute of Physics and Technology of Tomsk University], 1973, No 63, pp 49-68 (Translated from Referativnyy Zhurnal - Kibernetika, No 8, 1973, Abstract No 8 V151 by D. Chibisov)

Translation: A classification is suggested for statistical problems with respect to the degree of presence of a priori information. According to this, nonparametric problems are characterized by assignment of "only the differences between distributions". The basic statements of nonparametric problems and general methods of construction of nonparametric procedures are described.

1/1

USSR

SERYKH, A. P., TARASENKO, F. P.

"The Problem of Estimation of Nonlinear Functionals of the Unknown Probability Density of Quasi-U-Statistics"

Tr. Sib. fiz.-tekhn. in-ta pri Tomsk. un-te [Works of Siberian Institute of Physics and Technology of Tomsk University], 1973, No 63, pp 180-183 (Translated from Referativnyy Zhurnal - Kibernetika, No 8, 1973, Abstract No 8 V153 by T. Malevich)

Translation: Certain statistics (suggested by the authors and called by them quasi-U-statistics) are studied, which can be used for estimation of many important functionals of a distribution density. These statistics utilize known nonparametric estimates of density and U-statistics as studied by Hoffding. The asymptotic behavior of displacements, dispersions and distributions of quasi-U-statistics is studied.

1/1

USSR

DMITRIYEV, YU. G. and TARASENKO, F. P.

"The Problem of Statistical Estimation of Nonlinear Functions of a Probability Density"

Tr. Sib. Fiz.-Tekhn. In-ta pri Tomsk. Un-te [Works of Siberian Institute of Physics and Technology at Tomsk University], 1973, No 63, pp 154-168 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V97)

Translation: Suppose a certain characteristic of a distribution is represented by a functional such as

$$J = \int F[g(x), g^{(1)}(x), \dots, g^{(r)}(x)] g(x) dx, \quad (1)$$

where F is a certain function, $g(x)$, $g^{(1)}(x)$, ..., $g^{(r)}(x)$ are the probability function and its derivatives up to order r inclusively. The problem of estimation of J is studied, if density $g(x)$ is unknown. In order to produce the estimate J_N , it is suggested that the so-called "direct" method be used, consisting in substitution of a certain non-parametric estimate of density into expression (1). The necessary non-parametric estimates are the estimates of density and its derivatives

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USSR

DMITRIYEV, YU. G. and TARASENKO, F. P., Tr. Sib. Fiz.-Tekhn. In-ta pri Tomsk. Un-te, 1973, No 63, pp 154-168

as suggested in the works of Parzen, E. A. Nadarai, etc., based on the method of "degenerating" kernels.

Conditions are presented which assure convergence of estimates J_N to J with a probability of 1, when functional (1) has any of the following representations

$$J = \int_{-\infty}^{\infty} \frac{(g'(x))^2}{g(x)} dx \text{ is the information of Fisher,}$$

$$J = - \int_{-\infty}^{\infty} g(x) \ln g(x) dx \text{ is the entropy and } J = \int_{-\infty}^{\infty} g^2(x) dx.$$

The properties of the estimates J_N are also studied, when a histogram and polygram are looked upon as estimates of unknown density $g(x)$. However, it is assumed in this case that the functional in question is independent of the derivatives of $g(x)$.

In conclusion, the possibility of producing estimates J_N using the U-statistics introduced by Hoffding is studied.

A. Pinskiy

2/2

USSR

UDC: 519.2

TARASENKO, F. P., SHULENIN, V. P.

"Concerning the Statistical Relation Between an Observation and its Rank"

Tr. Sib. fiz.-tekhn. in-ta pri Tomsk. un-te (Works of the Siberian Physicotechnical Institute Affiliated with Tomsk University), 1971, vyp. 62, pp 220-228 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V164)

Translation: Expressions are given for a number of characteristics of the relation between an observation and its rank in a sample of volume N: the conditional distributions and mathematical expectations of one quantity when the other is fixed, the correlation coefficient, the amount of information in one quantity concerning the other. D. Chibisov.

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USSR

UDC: 621.391

KONEV, V. V., TARASENKO, F. P.

"On Communication With an Object Whose Coordinates are Measured With an Error"

Tr. Sib. fiz.-tekhn. in-ta pri Tomsk. un-te (Works of the Siberian Physico-technical Institute Associated With Tomsk University), 1970, vyp. 51, pp 282-286 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6A31)

Translation: The authors consider a system for communicating with a stationary object through a Gaussian channel with unknown exact signal-to-noise ratio. The optimum width of the radiation pattern of the antenna with and without feedback is determined. It is shown that when feedback is present it is necessary to use antennas with the maximum possible directivity. H. S.

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USSR

UDC: 621.391.812.3

TARASENKO, F. P.

"On a Model of a Communications Channel With Fading"

Tr. Sib. fiz.-tekhn. in-ta pri Tomsk. un-te (Works of the Siberian Physico-technical Institute Associated With Tomsk University), 1970, vyp. 51, pp 143-149 (from RZh-Radiotekhnika, No 6, Jun '71, Abstract No 6A29)

Translation: A model of a channel with fading is constructed on the basis of representing the signal as a vector with quadrature components. It is shown that independent multiplicative interference can be represented by an equivalent dependent additive noise, and, vice versa, independent additive interference can be represented by an equivalent dependent multiplicative noise. This model is used to find the distribution of the parameters of the signal passing through the channel in the presence of fading and additive noise. For phase methods of reception, distributions are found for the cases of tracking the phase of the coherent component, and tracking the total phase advance due to fading. Resumé.

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USSR

UDC 51:621.391

ROGOVA, G. V., TARASENKO, F. P.

"One Approach to Estimation of Optimal Redundancy in Transmission of Binary Signals Through Channels with Noise"

Tr. Sib. Fiz.-tekhn. In-ta pri Tomsk. Un-te [Works of Siberian Physics and Technology Institute at Tomsk University], No 51, 1970, pp 287-290, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V645 by Yu. Pyatoshin).

Translation: Tables are presented for the transmission rate of information through a binary channel with additive Gaussian noise and amplitude and phase modulation of the signal with various signal/noise ratios.

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USSR

UDC: 519.2:621.391

KONEV, V. V., TARASENKO, F. P.

"On Communication With an Object Whose Coordinates are Measured With an Error"

Tr. Sib. fiz.-tekhn. in-ta pri Tomsk. un-te (Works of the Siberian Physicotechnical Institute Affiliated With Tomsk University), vyp. 51, 1970, pp 282-286 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V289)

Translation: The authors discuss the problem of improving the traffic handling capacity of a radio communications channel with a stationary object whose coordinates are not precisely known and are estimated by means of a measurement system. V. Briker.

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UNCLASSIFIED
TITLE--ELECTRON DIFFRACTION STUDY OF THE STRUCTURE OF TETRAKIS
(DIMETHYLAMINO) STANNANE -U-
AUTHOR--VILKOV, L.V., TARASENKO, N.A., PROKOFYEV, A.K.
PROCESSING DATE--11SEP70
COUNTRY OF INFO--USSR
SOURCE--ZH. STRUKT. KHIM. 1970, 11(1) 129-31
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ELECTRON DIFFRACTION ANALYSIS, MOLECULAR STRUCTURE, ORGANOTIN
COMPOUND, CHEMICAL BONDING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1987/0314
CIRC ACCESSION NO--AP0103969
STEP NO--UR/0192/70/011/001/0129/0131
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--11SEP70.

CIRC ACCESSION NO--AP0103969

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELECTRON DIFFRACTION DETN. OF THE MOL. STRUCTURE OF SNINME SUB2) SUB4 IN VAPOR PHASE ESTABLISHED THE FOLLOWING BOND LENGTHS IN THE TETRAHEDRAL MOL.: SN-N 2.045, C-N 1.45, AND C-H 1.10 ANGSTROMS. BOND ANGLES WERE FOUND AS CNC 119 PLUS OR MINUS 3DEGREES AND SNNC 117.5 PLUS OR MINUS 1.5DEGREES ARE NEARLY COPLANAR (SUGGESTING SP PRIME2 HYBRIDIZATION), AS IN RELATED CL SUB2 PNME SUB2 AND N(SIH SUB3) SUB3.

UNCLASSIFIED

UNCLASSIFIED
TITLE--DNA SYNTHESIS IN CELLS OF GERMINATING BARLEY AND WHEAT SEEDS DURING
THE ACTION OF CHEMICAL MUTAGENS -U-
AUTHOR--TARASENKO, N.O.
COUNTRY OF INFO--USSR
SOURCE--GENETIKA 1970, 6(1), 36-41
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--CEREAL CROP, WHEAT, AGRICULTURE CROP SEED, PLANT PHYSIOLOGY,
MUTAGEN, BENZENE DERIVATIVE, ALKYLATION, MITOSIS, DNA, BIOSYNTHESIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3003/1147
CIRC ACCESSION NO--APO130175
STEP NO--UR/0473/70/006/001/0036/0041
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0130175

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. FROM THE PERIOD OF IMBIBITION OF BARLEY SEEDS TO THE TIME OF THE FIRST MITOSES A SMALL NO. OF CELLS BEGINS DNA SYSTHESIS DEPENDING ON THE CLIMATIC CONDITIONS OF SEED RIPENING. AFTER GROWTH STIMULATION WITH K NAPHTHENATES, THE G SUB1 STAGE WAS HETEROGENEOUS AND CONSISTED OF THE G SUB1 STAGE AND G SUB0 STAGE (CELLS IN DEEP REST). THE STIMULATOR INCREASED THE NO. OF CELLS PROGRESSING FROM STAGE G SUB1 TO SYNTHESIS 6.5-7.0 FOLD IN BARLEY AND 3 FOLD WHEAT. GROWTH STIMULATION WITH NAPHTHENATES AND ALKYLATING MUTAGENS SLIGHTLY INCREASED THE FREQUENCY OF CHLOROPHYLL MUTATIONS. THE RATIO BETWEEN NORMAL AND MUTANT SEEDLINGS WAS 1.5:1 TO 7.4:1. FACILITY: INST. CYTOL. GENET., NOVOSIBIRSK, USSR.

UNCLASSIFIED

UNCLASSIFIED
ACCELERATORS FOR COLD CURING OF POLYESTER ACRYLATE RESINS -U-
PROCESSING DATE--02 OCT 70
AUTHOR--(U2)--TARASENKO, N.F., MAKSIMENKO, A.S.
COUNTRY OF INFO--USSR
SOURCE--KHIM. PRGM. UKR. 1970, (1) P 12
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--ACRYLATE, POLYESTER RESIN, CURING AGENT, CUMENE,
HYDROPEROXIDE, COBALT COMPOUND, CHEMICAL STABILITY, MECHANICAL
STRENGTH/(U)311TKHS POLYESTER RESIN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1992/1510
CIRC ACCESSION NO--AP0112504
STEP NO--UR/0436/70/000/001/0012/0012
UNCLASSIFIED

ABSTRACT/EXTRACT--(U) GP-0- UNCLASSIFIED
PROCESSING DATE--02OCT70
ABSTRACT. COMPN. 311-TKHS (MIXT. OF
POLYESTERS) WAS CURED AT ROOM TEMP. WITH NH SUB4 CO(SCN) SUB4, CO
RESINATE (I), OR MN RESINATE. THESE HARDENERS BY THEMSELVES GAVE SLOW
CURING RATES, BUT WITH CUMENE HYDROPEROXIDE (II) THEIR HARDENING TIME
(I) WAS REDUCED TO SMALLER THAN OR EQUAL TO 24 HR AND THE CURE WAS
88-90PERCENT COMPLETE. THE TYPICAL COMPN. CONSISTED OF 311-TKHS 100,
TALC 100, I 10, II 3 PARTS. SUCH COMPN. RESISTED THE ACTION OF
36PERCENT HCL SOLN., ACOH, AC SUB2 O, 5PERCENT HNO SUB3 SOLN., 10PERCENT
ALK. SOLN., OR 10PERCENT NA SUB2 CO SUB3 AT 50-60DEGREES FOR 30 DAYS AND
THEIR MECH. STRENGTH WAS EQUIV. TO 311-TKHS COMPN. CURED WITH II AND CO
NAPHTHENATE AT HIGH TEMPS.

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